

**CLAIMS**

1. An on water data logger which includes
  - a) a movement sensor to sense movement
  - 5 b) at least one physiological sensor attachable to a human body
  - c) a control unit to receive the data from the movement sensor and the physiological sensor
  - d) said control unit being programmed to manipulate the received data and transform it into useful parameters for assessing performance
  - 10 e) display means for displaying the said parameters
  - f) storage means for storing the parameters and/or
  - g) telemetry means for transmitting the parameters to a remote control point
- 15 2. An on water data logger as claimed in claim 1 in which the data logger is fitted to a rowing craft and physiological sensors are fitted to each crew member and arranged to communicate with said data logger.
- 20 3. An on water data logger as claimed in claim 1 or 2 in which the movement sensor is an accelerometer that is used to derive stroke rate for a rowing craft.
4. An on water data logger as claimed in any preceding claim that also includes a boat speed sensor.
- 25 5. An on water data logger as claimed in any preceding claim which includes a GPS unit used to derive velocity and stroke rate
6. An on water data logger as claimed in any preceding claim in which the  
30 physiological sensor is a heart rate monitor.

7. A data acquisition system for use in sporting events which incorporates
- a) a global position sensor to derive three dimensional positioning data relative to time elapse
  - b) at least one accelerometer to derive acceleration and velocity data in three dimensions
  - c) a microcontroller with a clock to interrogate the global position sensor at a frequency of at least 1Hz and to measure the accelerometer data
  - d) a power supply
  - e) communication means for wireless transmission of global position and accelerometer data from the microcontroller to a remote computer device
  - f) the remote computer device being programmed to use the global position and accelerometer data to provide accurate and continuous output of parameters such as velocity acceleration and distance traveled.
8. A data acquisition system as claimed in claim 7 in which velocity is derived from the global position sensor and the accelerometer data is sampled to obtain movement characteristics of the sport being monitored.
9. A data acquisition system as claimed in claim 7 wherein the accelerometer data is integrated to derive velocity related movement characteristics and drift is be checked every second using the output from the global position sensor.
10. A data acquisition system as claimed in claim 7 wherein an inertial navigation system based on the accelerometer data is used to determine position when the GPS system is unable to receive it data.